

Date: Sat, 6 Aug 94 04:30:25 PDT
From: Ham-Homebrew Mailing List and Newsgroup <ham-homebrew@ucsd.edu>
Errors-To: Ham-Homebrew-Errors@UCSD.Edu
Reply-To: Ham-Homebrew@UCSD.Edu
Precedence: Bulk
Subject: Ham-Homebrew Digest V94 #225
To: Ham-Homebrew

Ham-Homebrew Digest Sat, 6 Aug 94 Volume 94 : Issue 225

Today's Topics:

 2m mobil amplifier
 Ferrite cores and beads (2 msgs)
 homebrew GPS radio front end
 Plastic vs. Metal Transistors
 Source for transistors
 Tube Receiver IF oscillates, Help
 Tubes for sale
 Xtal application (series/parallel) (3 msgs)

Send Replies or notes for publication to: <Ham-Homebrew@UCSD.Edu>
Send subscription requests to: <Ham-Homebrew-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Homebrew Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-homebrew".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: Thu, 4 Aug 1994 22:26:48 GMT
From: ihnp4.ucsd.edu!news.acns.nwu.edu!math.ohio-state.edu!usc!nic-nac.CSU.net!
charnel.ecst.csuchico.edu!csusac!csus.edu!netcom.com!btoback@network.ucsd.edu
Subject: 2m mobil amplifier
To: ham-homebrew@ucsd.edu

In article <CtyxrA.2LL@sunsrvr6.cci.com> jdc@cci.com (James D. Cronin) writes:
>>--

>
>Try the ARRL Handbook. My 1974 copy has a 25 and 45 watt amp for
>2-meters.
>
>Strangely enough, older editions have more useful information.
>The new ones cover things that apply to every-ham, like 45 foot
>dish antennas mounted on navy surplus gun mounts. Or really

>useful things that can't be found anywhere else, like ASCII/Baudot
>tables and other newfangled computer stuff.

In defence of the current Handbook, the editors have a lot more to cover today than they did in 1972 -- or 1965, the earliest Handbook I have. In 1972, nobody was doing data communication, spread-spectrum, computerized logging, digital controls, DDS, AMTOR, etc. Almost nobody was doing EME or satellite communication, weather satellite reception, microwave communication... how many entrants would there have been in a 10 GHz contest in 1972?

The ARRL could have dealt with this in either of two ways. One way is to make the Handbook a lot bigger, so it could go into the same depth on all these subjects as it did HF and VHF in 1972. You know, schematics and such for computers (two or three different processors), modems (two or three different kinds, plus a DSP one with some software), a treatise on programming, a couple of spread-spectrum rigs (one FH and one DS) and maybe a wideband amplifier for SS use, an AMTOR controller, a packet TNC, a couple of microwave amplifiers and exciters, with maybe three for the lower microwave bands plus one for the 47GHz and one for the 120GHz band, a repeater controller (two would be nice: one computer-controlled and one hard-wired), plus all the HF and VHF projects suitably updated to today's techniques. In addition to all the construction projects, they should have sections dealing with satellite tracking, including a couple of computer programs (one for a PC, one for a handheld), a mathematical analysis of spread-spectrum techniques, a full description of pacsat and weather satellite capabilities and communication protocols, information on designing and analyzing microstrip and waveguide circuits, information on adapting TWTs, magnetrons and klystrons to amateur frequencies (with one or two construction projects for illustration), a section on preparation of information for repeater frequency coordination, and so on. The deluxe edition could come with wheels and a little pull-up handle, like a Samsonite.

The other alternative, the one they chose, is to provide at least a few pages on almost everything that any ham could possibly need to know, and then go into detail on the basics: electrical theory, circuit design, antenna principles (though some say they should do a better job on electromagnetics), operating practices, and construction techniques. If you want more about any of the "esoteric" subjects, there's the Satellite Experimenter's Handbook, the RTTY/AMTOR Companion, the Spread Spectrum Sourcebook, the Microwave Experimenter's Handbook, and so on. ARRL still provides the information and the projects; they just put it in multiple volumes. I think this is a much better idea than a Handbook that weighs 10kg and costs \$125.

>And then there's projects using parts cheaply and easily available
>in the 90's. Well, I'm off to the local Radio Shack for some dual-

>gate MOSFET's.

Well, they don't have any dual-gate MOSFETs, but they have a single-gate MOSFET. Maybe you could put two in series. :-)

-- Bruce KN6MN

Date: Fri, 5 Aug 1994 02:02:53 GMT
From: ihnp4.ucsd.edu!agate!library.ucla.edu!csulb.edu!nic-nac.CSU.net!
charnel.ecst.csuchico.edu!yeshua.marcam.com!news.kei.com!ub!freenet.buffalo.edu!
aa450@network.ucsd.edu
Subject: Ferrite cores and beads
To: ham-homebrew@ucsd.edu

In a previous article, yee@mipg.upenn.edu (Conway Yee) says:

>I am working on a power/swr meter project and am in need of some
>ferrite beads (Amidon FB73-101) and ferrite cores (Amidon T50-3). I
>am unable to find a vendor for these. Newark, Active and Digikey
>don't seem to carry it (at least by Amidon) and I don't know the part

Amidon sells direct, but they are most expensive. Try Oak Hills,
Dan's Small Parts, Ocean State. They all use corresponding Amidon
part numbers. If you need addresses or phone numbers, email me and
I'll digum up.

--

Date: Fri, 5 Aug 1994 18:28:34 GMT
From: ihnp4.ucsd.edu!agate!dog.ee.lbl.gov!newshub.nosc.mil!
avalon.chinalake.navy.mil!usenet@network.ucsd.edu
Subject: Ferrite cores and beads
To: ham-homebrew@ucsd.edu

In article <YEE.94Aug4131058@mipgsun.mipg.upenn.edu>, <yee@mipg.upenn.edu>
writes:

> Path:
avalon.chinalake.navy.mil!newshub.nosc.mil!ihnp4.ucsd.edu!newshub.sdsu.edu!nic-
nac.CSU.net!charnel.ecst.csuchico.edu!yeshua.marcam.com!zip.eecs.umich.edu!news
xfer.itd.umich.edu!iscllient.merit.edu!msuinfo!netnews.upenn.edu!netnews.upenn.e
du!yee
> From: yee@mipg.upenn.edu (Conway Yee)
> Newsgroups: rec.radio.amateur.homebrew
> Subject: Ferrite cores and beads
> Followup-To: rec.radio.amateur.homebrew

> Date: 04 Aug 1994 17:10:52 GMT
> Organization: Medical Image Processing Group, U of Penn
> Lines: 12
> Message-ID: <YEE.94Aug4131058@mipgsun.mipg.upenn.edu>
> NNTP-Posting-Host: mipgsun.mipg.upenn.edu
>
> I am working on a power/swr meter project and am in need of some
> ferrite beads (Amidon FB73-101) and ferrite cores (Amidon T50-3). I
> am unable to find a vendor for these. Newark, Active and Digikey
> don't seem to carry it (at least by Amidon) and I don't know the part
> numbers for other manufacturers.
>
>
> --
> Medical Image Processing Group | 73 de Conway Yee, N2JWQ
> 411 Blockley Hall | EMAIL : yee@mipg.upenn.edu
> 423 Guardian Drive | TELEPHONE : 1 (215) 662-6780
> Philadelphia, PA 19104-6021 (USA) | FAX : 1 (215) 898-9145

I would try:

FerriShield, Inc (212) 268-4020 POC: Jeri Olsen
Palomar Engineers (619) 747-3343

Good Luck.

~~~~~  
Name: Michael Raider  
E-mail: raider@makomugu.navy.mil  
Date: 08/05/94  
Time: 11:32:14

The above opinions are entirely my own, and they do not represent  
the official position of Naval Air Warfare Center or the DON.

~~~~~  

Date: Wed, 3 Aug 1994 21:41:48 GMT
From: njitgw.njit.edu!helios.njit.edu!ken@RUTGERS.EDU
Subject: homebrew GPS radio front end
To: ham-homebrew@ucsd.edu

Hello, does anyone in this group remember seeing an article on a home brew
GPS receiver? I recall seeing such an article about 3 years ago in an
ARRL proceeding of some kind, but I do not recall the title. Also, does
anyone know where I can get a reprint of it if it is available? Please
e-mail me as I am not a regular reader here. Thanks.

--

Kenneth Ng: ken@helios.njit.edu

"No problem, here is how you make one" -- R. Barkley, ST: TNG

Date: 4 Aug 1994 21:04:06 GMT

From: ihnp4.ucsd.edu!agate!howland.reston.ans.net!europa.eng.gtefsd.com!
library.ucla.edu!csulb.edu!nic-nac.CSU.net!usc!elroy.jpl.nasa.gov!lll-
winken.llnl.gov!fnnews.fnal.gov!usenet@network.UCSD

Subject: Plastic vs. Metal Transistors

To: ham-homebrew@ucsd.edu

In article <445@ted.win.net>, mjsilva@ted.win.net (Michael Silva) says:

>

>Can someone explain the differences I should expect to find between
>"identical" transistors in plastic and metal? My specific case
>involves some PN5179s I have. Is there any case where these might not
>work in a circuit designed for a 2N5179? Aside from having less heat
>dissipating ability, are the plastics in any way inferior?

>

>Thanks for any info.

>

>Mike, KK6GM

>

>

Often the plastic package has less capacitance and so might be better at
high frequency. The metal can is usually thought to be better
environmentally, but since passivation it does not make much difference.

Tom Droege

Date: 4 Aug 1994 20:35:25 GMT

From: athos.cc.bellcore.com!briscas!papo@uunet.uu.net

Subject: Source for transistors

To: ham-homebrew@ucsd.edu

Greetings!

Is there such kit over over netland? Where I can get a decent solid state ,
transistor based QRP kit ? Any experience wick such things?
Does someone knows what I'm talking about? (I'm sure I'm not. :))

Regards,

--

Luis Roberto Anaya-Rivera papo@donuts0.bellcore.com
A True PL/1 Hacker papo@briscas.gamekeeper.bellcore.com
Bellcore, NJ Ham: N2ZXE

--

Luis Roberto Anaya-Rivera papo@donuts0.bellcore.com
A True PL/1 Hacker papo@briscas.gamekeeper.bellcore.com
Bellcore, NJ Ham: N2ZXE

Date: Fri, 5 Aug 1994 16:34:51 GMT
From: newsgate.melpar.esys.com!melpar!phb@uunet.uu.net
Subject: Tube Receiver IF oscillates, Help
To: ham-homebrew@ucsd.edu

ed@fore.com (Ed Bathgate) writes:

>Ok older tube hackers, this one is for you.

>I have a tempo one, Tube hf rig, I have been using the receiver for
>over a month, I borrowed a portable tube tester and removed the tubes
>1 at a time. Tested them and put them back in their respective sockets.
>All the tubes tested either good or the hi end of the \?/ range.

>When I powered tempo up, I got a full scale S meter reading and no received
>audio at all, Could not even receive the xtal calibrator.

>I started pulling tubes out and finally removed (I think) the 1st IF tube,
>a 12AX7A, the S meter went down. I swapped it with another 12AX7A (tx circuit)
>and I was able to receive the xtal cal osc, but on AM I was getting a tone that
>would zero beat and then increase in freq when I qsy +/- the calibrate signal.

>Is there a possibility that the tube checker (an EICO briefcase style) could
>have damaged the tubes? They all checked good, or near good, and no shorts.
>I am wondering if I may have cracked a tube socket solder connection pulling
>& inserting the tubes.

Since all you did was pull the tubes and replace them, I would immediately suspect a cracked/cold solder joint on one of the socket pins, probably a cathode or (if there are anything but dual triodes) screen bypass capacitor coming unconnected which allows the tube to self-oscillate. There could be other reasons owing to the same cause (bad connection), such as a disconnected wire or some such, but I'd definitely check the sockets carefully. Use a magnifying glass if you have to, and if a pin connection looks doubtful, give it a touch with your iron (or gun, if you still use one on tube stuff like I do).

If the connections are all good, try cleaning the tube pins & sockets by spraying cleaner on the pins and the socket and inserting & removing the tubes a couple of times to clean the surfaces.

Paul, K4MSG

	* Paul H. Bock, Jr.	* Principal Systems Engineer
(_)	* E-Systems/Melpar Div.	* Telephone: (703) 560-5000 x2062
)	* 7700 Arlington Blvd.	* Internet: pbock@melpar.esys.com
	* Falls Church, VA 22046	* Mailstop: N203

"Never ascribe to a sinister motive
that which is more likely due to stupidity."

Date: Fri, 5 Aug 1994 18:20:00 GMT
From: newsflash.concordia.ca!vax2.concordia.ca!hirschj@uunet.uu.net
Subject: Tubes for sale
To: ham-homebrew@ucsd.edu

I have access to a large supply of tubes of all types.
E-mail the ID's for your needs and I'll email availability
and prices. There are literally thousands...too many to list.

--Jack
Email: HIRSCHJ@vax2.concordia.ca

Date: Wed, 3 Aug 1994 22:37:53 GMT
From: portal.com!sdd.hp.com!hp-pcd!hpcvsnz!tomb@decwrl.dec.com
Subject: Xtal application (series/parallel)
To: ham-homebrew@ucsd.edu

Richard Karlquist (rkarlqu@sdd.hp.com) wrote:
: In article <31ob13\$e3e@mnews.mro.dec.com>,
: Tom Randolph <randolph@est.enet.dec.com> wrote:

: >I haven't been able to find much discussion of this in print...

: Crystal oscillator design, in my experience, is self taught or learned
: from other engineers. Books aren't much help.

There have been some pretty good articles in RF Design magazine over
the past 5 or so years on crystal oscillators. Most seem to be
written "by engineers for engineers", so they fall into the

second recommendation from Rick.

73, K7ITM

Date: 4 Aug 1994 21:29:51 GMT
From: ihnp4.ucsd.edu!ucsnews!sol.ctr.columbia.edu!howland.reston.ans.net!
math.ohio-state.edu!magnus.acs.ohio-state.edu!csn!col.hp.com!news.dtc.hp.com!
hpscit.sc.hp.com!rkarlqu@network.ucsd.edu
Subject: Xtal application (series/parallel)
To: ham-homebrew@ucsd.edu

In article <199408040856050SYSMAS@mvs.oac.ucla.edu>,
Michael Stein <OSYMAS@MVS.OAC.UCLA.EDU> wrote:
>>Crystal oscillator design, in my experience, is self taught or learned
>>from other engineers. Books aren't much help.
>
>Have you seen:
>
> "Design of Crystal and Other Harmonic Oscillators"
> by Benjamin Parzen
> John Wiley & Sons

Parzen, of "OSCI" and "LLATOR" fame? Give me a break!

Rick
rkarlqu@scd.hp.com

Date: 4 Aug 1994 21:27:14 GMT
From: ihnp4.ucsd.edu!ucsnews!sol.ctr.columbia.edu!howland.reston.ans.net!
math.ohio-state.edu!magnus.acs.ohio-state.edu!csn!col.hp.com!news.dtc.hp.com!
hpscit.sc.hp.com!rkarlqu@network.ucsd.edu
Subject: Xtal application (series/parallel)
To: ham-homebrew@ucsd.edu

In article <CtzDJ5.E7o@hpcvsnz.cv.hp.com>, Tom Bruhns <tomb@lsid.hp.com> wrote:
>Richard Karlquist (rkarlqu@scd.hp.com) wrote:
>: In article <31ob13\$e3e@mrnews.mro.dec.com>,
>: Tom Randolph <randolph@est.enet.dec.com> wrote:
>
>: >I haven't been able to find much discussion of this in print...
>
>: Crystal oscillator design, in my experience, is self taught or learned
>: from other engineers. Books aren't much help.
>

>There have been some pretty good articles in RF Design magazine over
>the past 5 or so years on crystal oscillators. Most seem to be
>written "by engineers for engineers", so they fall into the
>second recommendation from Rick.

>

>73, K7ITM

Actually, I am not all that impressed with the general quality
of articles in RF Design magazine. If you've found them
helpful, that's great, but I don't think they're going to
result in large numbers of people becoming proficient in
oscillator design merely by reading them.

As always, your milage may vary.

Rick Karlquist N6RK
rkarlqu@scd.hp.com

End of Ham-Homebrew Digest V94 #225
